

# Inventor Search

J. Hines; 09/838,382

Page 1

Point of Contact:  
Thomas G. Larson, Ph.D.  
703-308-7309  
CM1, Rm. 6 B 01

=> file medline agricola caba vetu caplus biosis embase wpids  
FILE 'MEDLINE' ENTERED AT 11:44:35 ON 22 AUG 2002

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=> s danforth H?/au  
L1 570 DANFORTH H?/AU

=> s fernando M?/au  
L2 779 FERNANDO M?/AU

=> s Barta J?/au  
L3 519 BARTA J?/AU

=> s L1 and L2 and L3  
L4 12 L1 AND L2 AND L3

=> s (L1 and L2) or (L1 and L3) or (L2 and L3)  
L5 78 (L1 AND L2) OR (L1 AND L3) OR (L2 AND L3)

=> s (eimeria and maxima) or (e (w) maxima)  
L6 2791 (EIMERIA AND MAXIMA) OR (E (W) MAXIMA)

=> s L5 and L6  
L7 21 L5 AND L6

=> s L4 or L7  
L8 21 L4 OR L7

=> dup rem L8  
PROCESSING COMPLETED FOR L8  
L9 4 DUP REM L8 (17 DUPLICATES REMOVED)

=> d ibib ab 1-4

L9 ANSWER 1 OF 4 MEDLINE  
ACCESSION NUMBER: 2001367352 MEDLINE

DUPLICATE 1

— find citations for all three inventors

} find citations with at least 2 inventors and E. maxima as subject matter.

— combine answer sets.

remove duplicates

DOCUMENT NUMBER: 21073871 PubMed ID: 11206107  
 TITLE: A comparison of sporozoite transport after homologous and heterologous challenge in chickens immunized with the Guelph strain or the Florida strain of *Eimeria maxima*.  
 AUTHOR: Beattie S E; Fernando M A; Barta J R  
 CORPORATE SOURCE: Department of Pathobiology, University of Guelph, Ontario, Canada.  
 SOURCE: PARASITOLOGY RESEARCH, (2001 Feb) 87 (2) 116-21.  
 Journal code: 8703571. ISSN: 0932-0113.  
 PUB. COUNTRY: Germany: Germany, Federal Republic of  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 200106  
 ENTRY DATE: Entered STN: 20010702  
 Last Updated on STN: 20010702  
 Entered Medline: 20010628

AB The two strains of *Eimeria maxima*, Guelph and Florida, used in this study were previously shown to only partially cross-protect immunologically with respect to lesion scores, weight gains and feed conversions after heterologous challenge. In this paper, we provide evidence that this partial lack of cross-protection is manifested at the level of sporozoite transport. In birds immunized and challenged with the homologous strain, sporozoites accumulated in the lamina propria and were blocked from further movement into the crypts by 72 h post-challenge, unlike the situation observed in naive birds. Fewer than 5% of sporozoites were found in the crypts by 72 h post-challenge. In immunized birds challenged with the heterologous strain, fewer sporozoites reached the crypts than in naive birds but at least four times as many sporozoites successfully migrated to the crypts, when compared with birds challenged with the homologous strain. The degree of cross-protection afforded by the heterologous strain as measured by sporozoite transport success was not equally reciprocal.

L9 ANSWER 2 OF 4 MEDLINE DUPLICATE 2  
 ACCESSION NUMBER: 1998220120 MEDLINE  
 DOCUMENT NUMBER: 98220120 PubMed ID: 9559366  
 TITLE: Analysis of infraspecific variation among five strains of *Eimeria maxima* from North America.  
 AUTHOR: Barta J R; Coles B A; Schito M L; Fernando M A; Martin A; Danforth H D  
 CORPORATE SOURCE: Department of Pathobiology, Ontario Veterinary College, University of Guelph, Ont., Canada.. jbarta@uoguelph.ca  
 SOURCE: INTERNATIONAL JOURNAL FOR PARASITOLOGY, (1998 Mar) 28 (3) 485-92.  
 Journal code: 0314024. ISSN: 0020-7519.  
 PUB. COUNTRY: ENGLAND: United Kingdom  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 199805  
 ENTRY DATE: Entered STN: 19980514  
 Last Updated on STN: 19980514  
 Entered Medline: 19980505

AB Two laboratory strains from the eastern shore of Maryland 15 years ago and from an Ontario broiler house 23 years ago and three recent field strains of *Eimeria maxima* (isolated in Maryland, North Carolina and Florida) were examined for phenotypic and genotypic variation using protein profiles, random amplified polymorphic DNA-PCR analysis and

DNA sequences obtained from the internal transcribed spacer regions of the rRNA genes. Staining profiles obtained by one-dimensional SDS-PAGE of sporozoite proteins were identical in all five strains. Using random amplified polymorphic DNA-PCR analysis with high %G-C content decamers as primers, we were able to confirm that the five strains are all *E. maxima*, but were unable to discern any relationships among them because of the limited number of shared polymorphisms identified. In contrast, cloning and sequencing of the internal transcribed spacer-1, 5.8S rDNA and internal transcribed spacer-2 regions of the rRNA genes provided sufficient sequence information to infer phylogenetic relationships among the strains. Almost all of the infraspecific variation was located in the internal transcribed spacer regions. Only two base changes were identified within the 5.8S rRNA gene. Evolutionary relationships among the strains inferred using parsimony analysis of the aligned internal transcribed spacer sequences were well supported, but the hypothesised relationships did not correlate well with the demonstrated immunological cross-reactivities of these strains.

L9 ANSWER 3 OF 4 MEDLINE DUPLICATE 3  
 ACCESSION NUMBER: 97337204 MEDLINE  
 DOCUMENT NUMBER: 97337204 PubMed ID: 9193946  
 TITLE: Analysis of immunological cross-protection and sensitivities to anticoccidial drugs among five geographical and temporal strains of *Eimeria maxima*.  
 AUTHOR: Martin A G; Danforth H D; Barta J R; Fernando M A  
 CORPORATE SOURCE: U.S. Department of Agriculture, Agricultural Research Service, Beltsville, MD 20705, USA.  
 SOURCE: INTERNATIONAL JOURNAL FOR PARASITOLOGY, (1997 May) 27 (5) 527-33.  
 Journal code: 0314024. ISSN: 0020-7519.  
 PUB. COUNTRY: ENGLAND: United Kingdom  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 OTHER SOURCE: GENBANK-AF027722; GENBANK-AF027723; GENBANK-AF027724; GENBANK-AF027725; GENBANK-AF027726  
 ENTRY MONTH: 199707  
 ENTRY DATE: Entered STN: 19970724  
 Last Updated on STN: 20000303  
 Entered Medline: 19970717  
 AB Two laboratory strains (USDA strain No. 68 isolated from the eastern shore of Maryland 15 years ago and a University of Guelph strain isolated from an Ontario broiler house 23 years ago) and 3 recent field strains of *Eimeria maxima* [isolated in Maryland (MD), North Carolina (NC) and Florida (FL)] were tested for their ability to induce cross-protective immunity and their sensitivities to a variety of anticoccidial compounds. To assess immunological cross-protection, 1-day-old chicks were inoculated and subsequently challenged at 10 days of age, testing all possible combinations of initial inoculating (immunizing) and subsequent challenge strain. Six days post-challenge, chicks were killed and weight gains and lesion scores were determined and compared to sham inoculated and challenged, and sham challenged age-matched controls. The 2 laboratory strains and the NC strain were fully cross-protective against each other by both these measures. In contrast, the MD and FL strains induced complete protection only against the homologous strain. Reciprocally, no other strains protected chicks completely against the FL and MD strains. Drug sensitivity studies using 10 different anticoccidial formulations at prescribed drug levels showed significant differences

between the 2 laboratory strains and the 3 recently isolated field strains; more recent isolates from commercial broiler houses demonstrated complete or partial resistance to a wider range of anticoccidial compounds. No correlation was seen between cross-protection and sensitivities to anticoccidials.

L9 ANSWER 4 OF 4 MEDLINE DUPLICATE 4  
 ACCESSION NUMBER: 97259180 MEDLINE  
 DOCUMENT NUMBER: 97259180 PubMed ID: 9105308  
 TITLE: Phylogenetic relationships among eight *Eimeria* species infecting domestic fowl inferred using complete small subunit ribosomal DNA sequences.  
 AUTHOR: Barta J R; Martin D S; Liberator P A; Dashkevicz M; Anderson J W; Feighner S D; Elbrecht A; Perkins-Barrow A; Jenkins M C; Danforth H D; Ruff M D; Profous-Juchelka H  
 CORPORATE SOURCE: Department of Pathobiology, Ontario Veterinary College, University of Guelph, Canada.  
 SOURCE: JOURNAL OF PARASITOLOGY, (1997 Apr) 83 (2) 262-71. Journal code: 7803124. ISSN: 0022-3395.  
 PUB. COUNTRY: United States  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 OTHER SOURCE: GENBANK-U67115; GENBANK-U67116; GENBANK-U67117; GENBANK-U67118; GENBANK-U67119; GENBANK-U67120; GENBANK-U67121  
 ENTRY MONTH: 199704  
 ENTRY DATE: Entered STN: 19970507  
 Last Updated on STN: 19990129  
 Entered Medline: 19970430  
 AB Complete 18S ribosomal RNA gene sequences were determined for 8 *Eimeria* species of chickens and for *Eimeria bovis* of cattle. Sequences were aligned with each other and with sequences from 2 *Sarcocystis* spp., *Toxoplasma gondii*, *Neospora caninum*, and 4 *Cryptosporidium* spp. Aligned sequences were analyzed by maximum parsimony to infer evolutionary relationships among the avian *Eimeria* species. *Eimeria bovis* was found to be the sister taxon to the 8 *Eimeria* species infecting chickens. Within the avian *Eimeria* species, *E. necatrix* and *E. tenella* were sister taxa: this clade attached basally to the other chicken coccidia. The remaining *Eimeria* spp. formed 3 clades that correlated with similarities based on oocyst size and shape. *Eimeria mitis* and *Eimeria mivati* (small, near spherical oocysts) formed the next most basal clade followed by a clade comprising *Eimeria praecox*, *Eimeria maxima*, and *Eimeria brumetti* (large, oval oocysts), which was the sister group to *Eimeria acervulina* (small, oval oocysts). The 4 clades of avian *Eimeria* species were strongly supported in a bootstrap analysis. Basal rooting of *E. necatrix* and *E. tenella* between *E. bovis* and the remaining *Eimeria* species and the apparent absence of coccidia that infect the ceca of jungle fowl all suggest that *E. necatrix* and *E. tenella* may have arisen from a host switch, perhaps from the North American turkey, *Meleagris gallopavo*.

=> s 15 not 17  
L10 57 L5 NOT L7

=> dup rem 110  
PROCESSING COMPLETED FOR L10  
L11 15 DUP REM L10 (42 DUPLICATES REMOVED)

=> d ibib ab 1-15

*remove displayed documents from  
L5 to leave answers having at least  
two inventors but not E. maxima as  
subject matter.  
- Remove duplicates.*

L11 ANSWER 1 OF 15 MEDLINE DUPLICATE 1  
ACCESSION NUMBER: 2001334931 MEDLINE  
DOCUMENT NUMBER: 21296043 PubMed ID: 11403384  
TITLE: Involvement of CD 8+ and CD 3+ lymphocytes in the transport  
of Eimeria necatrix sporozoites within the intestinal  
mucosa of chickens.  
AUTHOR: Beattie S E; Barta J R; Fernando M A  
CORPORATE SOURCE: Department of Pathobiology, University of Guelph, Ontario,  
Canada.  
SOURCE: PARASITOLOGY RESEARCH, (2001 May) 87 (5) 405-8.  
Journal code: 8703571. ISSN: 0932-0113.  
PUB. COUNTRY: Germany: Germany, Federal Republic of  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 200110  
ENTRY DATE: Entered STN: 20011022  
Last Updated on STN: 20011022  
Entered Medline: 20011018  
AB The phenotype of cells transporting sporozoites of Eimeria necatrix during  
a primary infection was determined using a panel of six monoclonal  
antibodies to various chicken lymphocyte surface markers. Sporozoites and  
cells harboring them were examined at 8, 12 and 18 h postinfection using  
two-color immunofluorescence and confocal microscopy. The majority of  
parasites observed within lymphocytes were found in CD 8 + (15%) or CD 3+  
(13-22%) cells at all time periods examined. Smaller numbers were found  
within deltagamma TCR+ (5%) and alphabeta TCR+ (5%) lymphocytes. No  
sporozoites were found within CD 4+ or IgM+ lymphocytes at any of the time  
periods.

L11 ANSWER 2 OF 15 MEDLINE DUPLICATE 2  
ACCESSION NUMBER: 2001022512 MEDLINE  
DOCUMENT NUMBER: 20350969 PubMed ID: 10894471  
TITLE: Partial characterization of a non-proteinaceous, low  
molecular weight antigen of Eimeria tenella.  
AUTHOR: Barta J R; Tennyson S A; Schito M L;  
Danforth H D; Martin D S  
CORPORATE SOURCE: Department of Pathobiology, Ontario Veterinary College,  
University of Guelph, Canada.. jbarta@uoguelph.ca  
SOURCE: PARASITOLOGY RESEARCH, (2000 Jun) 86 (6) 461-6.  
Journal code: 8703571. ISSN: 0932-0113.  
PUB. COUNTRY: GERMANY: Germany, Federal Republic of  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 200011  
ENTRY DATE: Entered STN: 20010322  
Last Updated on STN: 20010322  
Entered Medline: 20001103  
AB A low molecular weight (LMW) antigen of Eimeria tenella, initially  
identified using a murine monoclonal antibody (mAb C(3)4F(1)) raised

against *E. tenella* sporozoites, was partially characterized using enzymatic degradation, solvent extraction, and immunization into various inbred lines of mice. The LMW antigen could be isolated using Folch extraction (methanol/chloroform/ water) and the epitope recognized by mAb C(3)4F(1) was resistant to degradation by alpha-amylase, pronase, and proteinase K, but was sensitive to sodium m-periodate treatment or digestion using mixed glycosidases (from *Turbo cornutus*). These observations suggest that the antigenic epitope recognized by mAb C(3)4F(1) is carbohydrate-dependent and, based on our ability to isolate the LMW antigen by Folch extraction, the epitope probably resides on a polar glycolipid. The inability of sporozoite-immunized nude mice to elicit a serum antibody response to this molecule indicates that it acts as a T-dependent antigen. Furthermore, sporozoite-immunized male CBA/N mice (with an X-linked immunodeficiency) also failed to elicit a serum antibody response to this molecule, which is consistent with a carbohydrate antigenic epitope. We propose that this antigenic molecule be designated ET-GL1 to reflect its origin and probable structure (*E. tenella* glycolipid 1).

L11 ANSWER 3 OF 15 MEDLINE DUPLICATE 3  
 ACCESSION NUMBER: 95158372 MEDLINE  
 DOCUMENT NUMBER: 95158372 PubMed ID: 7855125  
 TITLE: In vitro and in vivo immunolabeling of sporozoites, schizonts, and sexual stages of *Eimeria acervulina* and *E. tenella* by a species- and stage-cross-reactive monoclonal antibody.  
 AUTHOR: Danforth H D; Augustine P C; Barta J R; Jenkins M C  
 CORPORATE SOURCE: United States Department of Agriculture, Agriculture Research Service, Beltsville, MD 20705-2350.  
 SOURCE: PARASITOLOGY RESEARCH, (1994) 80 (7) 594-9.  
 Journal code: 8703571. ISSN: 0932-0113.  
 PUB. COUNTRY: GERMANY: Germany, Federal Republic of  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 199503  
 ENTRY DATE: Entered STN: 19950322  
 Last Updated on STN: 19950322  
 Entered Medline: 19950313  
 AB A cross-reactive monoclonal antibody (mAb), designated 1205, was used to study redistribution, parasitophorous vacuole (PV) incorporation, and in situ antigen production during the intracellular parasite development of *Eimeria acervulina* and *E. tenella*. Western-blot analysis of sporozoite preparations showed that the mAb recognized antigenic bands at 55 and 80 kDa. Indirect immunofluorescent antibody (IFA) labeling of sporozoites produced an internal dot pattern. Immunogold electron microscopy (IM) showed labeling of dense granules within sporozoites. The IFA pattern changed to a general-internal label in immature schizonts followed by a surface-tip pattern in mature merozoites both in vitro and in vivo. IM of the asexual stages revealed the same labeling pattern for the in vivo development of both species, and labeling of rhoptries was seen. In vitro, the PV membrane together with amorphous material within the PV was labeled by IFA during schizont development for *E. tenella*. No IM labeling of either the PV membrane or material within the PV was observed. Sexual stages seen in vivo for both species had the general-internal IFA pattern.

L11 ANSWER 4 OF 15 MEDLINE DUPLICATE 4  
 ACCESSION NUMBER: 93234431 MEDLINE  
 DOCUMENT NUMBER: 93234431 PubMed ID: 8475039

TITLE: Species and strain differentiation of *Eimeria* spp. of the domestic fowl using DNA polymorphisms amplified by arbitrary primers.

AUTHOR: Procunier J D; **Fernando M A; Barta J R**

CORPORATE SOURCE: Department of Pathology, University of Guelph, Ontario, Canada.

SOURCE: PARASITOLOGY RESEARCH, (1993) 79 (2) 98-102.  
Journal code: 8703571. ISSN: 0932-0113.

PUB. COUNTRY: GERMANY; Germany, Federal Republic of

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199305

ENTRY DATE: Entered STN: 19930604  
Last Updated on STN: 19930604  
Entered Medline: 19930514

AB *Eimeria* spp. from the domestic fowl were examined for genetic relatedness by the random amplified polymorphic DNA (RAPD) assay. Nine different oligonucleotide decamers with arbitrary DNA sequences were tested as primers to amplify DNA from six *Eimeria* species infecting chickens. Two strains each of *E. acervulina* and *E. tenella* were used. Depending on the species/strain-primer combination, between 1 and 12 DNA segments ranging in size from 0.16 to 4.95 kb were amplified. The two strains of *E. acervulina* showed minor and major differences in their amplified DNA patterns, giving a similarity coefficient of 61%. The two strains of *E. tenella* seemed to be more closely related, yielding a similarity coefficient of 98%. The differences observed between species were greater than those found between strains with every primer used, indicating that the RADP assay could be a useful tool for the study of relationships among these coccidia. The results obtained in this study also indicate the presence of unique, species-specific, amplified DNA segments that could be exploited to identify *Eimeria* species of the chicken.

L11 ANSWER 5 OF 15 MEDLINE DUPLICATE 5

ACCESSION NUMBER: 92284356 MEDLINE

DOCUMENT NUMBER: 92284356 PubMed ID: 1597789

TITLE: Localization of a low molecular weight antigen of *Eimeria tenella* by use of hybridoma antibodies.

AUTHOR: **Danforth H D; Barta J R; Augustine P C**

CORPORATE SOURCE: United States Department of Agriculture, Agriculture Research Service, Beltsville, Maryland 20705.

SOURCE: JOURNAL OF PARASITOLOGY, (1992 Jun) 78 (3) 460-5.  
Journal code: 7803124. ISSN: 0022-3395.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199207

ENTRY DATE: Entered STN: 19920717  
Last Updated on STN: 19920717  
Entered Medline: 19920706

AB Three monoclonal antibodies (Mabs), found by western blot analysis to recognize 10-kDa bands of *Eimeria tenella* sporozoite preparations, were used with immunoelectron (IE) microscopy, immunogold-silver staining (IGSS), and indirect immunofluorescent antibody (IFA) light microscopy to determine the location and distribution of the antigens in or on extra- and intracellular parasites. All 3 of the Mabs (designated C3, E5, and 1231) were found by IE microscopy to label amylopectin granules of extracellular sporozoites. Additionally, these Mabs extensively gold-labeled the sporocyst wall. In cultured primary chicken kidney cells

inoculated with sporozoites of *E. tenella*, IGSS showed surface labeling of the parasite and intense labeling of the infected host cells by 6 hr postinoculation (PI). At 24 hr PI, host cell vacuoles in infected and uninfected cells were labeled by the 3 Mabs by IFA. The E5 and C3 Mabs also were seen to label the host cell membrane of newly infected cells. The C3 and 1231 Mabs showed little label of the host cells by 48 hr PI, but the parasites still were labeled up to 96 hr PI. The E5 Mab had intense IFA labeling of infected host cells at 48 hr PI. The results of this study indicate that parasites apparently release antigenic material during the early stages of parasite development and that this material is found internally and/or on the surface of the infected host cells.

L11 ANSWER 6 OF 15 MEDLINE DUPLICATE 6  
 ACCESSION NUMBER: 92040075 MEDLINE  
 DOCUMENT NUMBER: 92040075 PubMed ID: 1937763  
 TITLE: X-irradiation of *Eimeria tenella* oocysts provides direct evidence that sporozoite invasion and early schizont development induce a protective immune response(s).  
 AUTHOR: Jenkins M C; Augustine P C; Danforth H D; Barta J R  
 CORPORATE SOURCE: Protozoan Diseases Laboratory, Agricultural Research Service, Beltsville, Maryland 20705.  
 SOURCE: INFECTION AND IMMUNITY, (1991 Nov) 59 (11) 4042-8. Journal code: 0246127. ISSN: 0019-9567.  
 PUB. COUNTRY: United States  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 199111  
 ENTRY DATE: Entered STN: 19920124  
 Last Updated on STN: 19920124  
 Entered Medline: 19911127

AB Sporulated oocysts of the protozoan parasite *Eimeria tenella* were attenuated by exposure to various doses of X-radiation to inhibit intracellular replication and thus determine whether sporozoites alone can induce a protective immune response. Exposure to doses greater than 15-kilorads had a significant effect on development, as indicated by the absence of oocyst production in chickens infected with parasites treated with 20 or 30 kilorads of radiation. Infection with nonirradiated or 15-kilorad-exposed parasites led to either normal or reduced oocyst shedding. Equivalent protection was afforded chickens inoculated with a minimum immunizing dose of either nonirradiated or 20-kilorad-irradiated *E. tenella* oocysts. Immunofluorescence staining of cecal tissue from chickens inoculated with 10(7) nonirradiated or 20- or 30-kilorad-irradiated oocysts with stage-specific monoclonal antibodies showed no significant difference in sporozoite invasion between treatment groups. Normal merogonic development was observed at appropriate times (48, 60, 72, and 96 h) postinfection in chickens inoculated with nonirradiated oocysts. In contrast, irradiated parasites exhibited minimal merogonic development at 48 h postinfection. Furthermore, no merogonic stages were observed at times of otherwise peak merozoite development (60, 72, and 96 h) in cecal tissue from chickens inoculated with irradiated parasites. Infection of chicken cells with irradiated or nonirradiated parasites in vitro corroborated these findings and indicate that events early after sporozoite invasion induce a protective immune response against this parasite.

L11 ANSWER 7 OF 15 MEDLINE DUPLICATE 7  
 ACCESSION NUMBER: 92061863 MEDLINE  
 DOCUMENT NUMBER: 92061863 PubMed ID: 1953577



**TITLE:** Development of protective immunity against *Eimeria tenella* and *E. acervulina* in White Leghorn chickens inoculated repeatedly with high doses of turkey coccidia.

**AUTHOR:** Augustine P C; **Danforth H D**; **Barta J R**

**CORPORATE SOURCE:** U.S. Department of Agriculture, Livestock and Poultry Science Institute, Beltsville, Maryland 20705.

**SOURCE:** AVIAN DISEASES, (1991 Jul-Sep) 35 (3) 535-41.  
Journal code: 0370617. ISSN: 0005-2086.

**PUB. COUNTRY:** United States

**DOCUMENT TYPE:** Journal; Article; (JOURNAL ARTICLE)

**LANGUAGE:** English

**FILE SEGMENT:** Priority Journals

**ENTRY MONTH:** 199112

**ENTRY DATE:** Entered STN: 19920124  
Last Updated on STN: 19920124  
Entered Medline: 19911203

**AB** Repeated inoculation (immunization) of 2-week-old white leghorn chickens with 10(6) oocysts of the turkey coccidia *Eimeria adenoeides* or *E. meleagridis* partially protected chickens against moderate challenge with *E. tenella* or *E. acervulina* oocysts, but not with *E. necatrix* oocysts. After challenge, mean weight gains of the immunized chickens and the unchallenged controls did not differ significantly, but weight gains of unimmunized chickens were significantly lower. The mean feed-conversion ratio of the immunized challenged chickens was 3.14, as compared with 4.42 for unimmunized challenged control chickens. In general, immunization did not markedly reduce intestinal lesions. Repeated inoculation of chickens with the turkey coccidium *E. gallopavonis* failed to produce statistically significant protection against challenge with *E. tenella*, *E. acervulina*, or *E. necatrix*, as determined by weight gain, feed-conversion efficiency, and lesion scores. Antibody profiles of individual chickens did not correlate with protection.

**L11 ANSWER 8 OF 15** **MEDLINE** **DUPLICATE 8**

**ACCESSION NUMBER:** 91304310 **MEDLINE**

**DOCUMENT NUMBER:** 91304310 **PubMed ID:** 2072862

**TITLE:** Evolutionary relationships of avian *Eimeria* species among other Apicomplexan protozoa: monophyly of the apicomplexa is supported.

**AUTHOR:** **Barta J R**; **Jenkins M C**; **Danforth H D**

**CORPORATE SOURCE:** Department of Pathology, University of Guelph, Ontario, Canada.

**SOURCE:** MOLECULAR BIOLOGY AND EVOLUTION, (1991 May) 8 (3) 345-55.  
Journal code: 8501455. ISSN: 0737-4038.

**PUB. COUNTRY:** United States

**DOCUMENT TYPE:** Journal; Article; (JOURNAL ARTICLE)

**LANGUAGE:** English

**FILE SEGMENT:** Priority Journals

**OTHER SOURCE:** GENBANK-M59480; GENBANK-M59481; GENBANK-M59482;  
GENBANK-M59483; GENBANK-M59484; GENBANK-M59485;  
GENBANK-M63275; GENBANK-M63276; GENBANK-M63277;  
GENBANK-M63278

**ENTRY MONTH:** 199108

**ENTRY DATE:** Entered STN: 19910908  
Last Updated on STN: 19910908  
Entered Medline: 19910819

**AB** Direct, reverse transcriptase-mediated, partial sequencing of the small-subunit (16S-like) ribosomal RNA (srRNA) of *Eimeria tenella* and *E. acervulina* was performed. Sequences were aligned by eye with six previously published, partial or complete srRNA sequences of apicomplexan protists (*Plasmodium berghei*, *Theileria annulata*, *Cryptosporidium* sp.,

*Toxoplasma gondii*, *Sarcocystis muris*, and *S. gigantea*). Six eukaryotic protists (a slime mold, a yeast, two dinoflagellates, and two ciliates) acted as an outgroup for a parsimony-based phylogenetic analysis (PAUP Ver. 3.0). The 188 phylogenetically informative sites (i.e., those positions that neither were unvaried nor had only autapomorphic substitutions) supported a single tree topology 481 steps in length with a consistency index of 0.65 in which the monophyly of the Apicomplexa was supported. The two *Eimeria* species and *S. muris*, *S. gigantea*, and *T. gondii* formed a pair of monophyletic groups that were sister groups. The two *Sarcocystis* species were not hypothesized to be sister taxa. The genera *Plasmodium* and *Cryptosporidium* were hypothesized to form the sister group to these five coccidia and *T. annulata*. A priori data-editing techniques that deleted "variable" positions prior to analysis failed to recognize the monophyly of the Apicomplexa when the same parsimony-based tree-building algorithm was used. Inability of the outgroup taxa to root the well-supported ingroup tree (Apicomplexa) at a unique site when these taxa were used individually for this purpose reinforces the need for an appropriate, multiple-taxon outgroup in such analyses.

L11 ANSWER 9 OF 15 MEDLINE DUPLICATE 9  
 ACCESSION NUMBER: 91200229 MEDLINE  
 DOCUMENT NUMBER: 91200229 PubMed ID: 2015867  
 TITLE: Development of resistance to coccidiosis in the absence of merogonic development using X-irradiated *Eimeria acervulina* oocysts.  
 AUTHOR: Jenkins M C; Augustine P C; Barta J R; Castle M D; Danforth H D  
 CORPORATE SOURCE: Protozoan Diseases Laboratory, U.S. Department of Agriculture, Beltsville, Maryland 20705.  
 SOURCE: EXPERIMENTAL PARASITOLOGY, (1991 Apr) 72 (3) 285-93. Journal code: 0370713. ISSN: 0014-4894.  
 PUB. COUNTRY: United States  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 199105  
 ENTRY DATE: Entered STN: 19910607  
 Last Updated on STN: 19970203  
 Entered Medline: 19910517

AB Sporulated oocysts of the protozoan *Eimeria acervulina* were subjected to 0, 10, 15, 20, or 30 krad of X-irradiation and inoculated into susceptible outbred chickens to determine if radioattenuated coccidia could induce protection against parasite challenge. Irradiation treatment had an appreciable dose-dependent effect on parasite development. Insignificant numbers of oocysts were produced by chickens inoculated with parasites that had been exposed to greater than 10 krad X-irradiation. Sporozoites exposed to 15 or 20 krad irradiation conferred significant protection against the appearance of intestinal lesions after parasite challenge. Sporozoites subjected to the highest dose level (30 krad) did not produce any significant level of protection. To investigate this phenomenon further and assess intracellular parasite development, susceptible outbred strains of chickens were administered either nonirradiated (0 krad) oocysts or oocysts that were exposed to an optimal dose (15 krad) or a high dose (30 krad) of X-irradiation. Immunofluorescence staining of tissue sections from each treatment group at various intervals after the initial administration of irradiated parasites indicated that sporozoites exposed to 15 krad irradiation were as capable of invading the host intestinal epithelium as nonirradiated sporozoites. However, at 48, 60, 72, and 96 hr, there was a marked reduction in merogonic development in groups receiving irradiated sporozoites compared to those inoculated with

nonirradiated parasites. The latter parasites underwent profuse merogonic development; in contrast, irradiated parasites demonstrated little (15 krad) or no (30 krad) merogonic development. These results suggest that induction of a protective immune response occurs during a critical period early in intracellular development of *E. acervulina*.

L11 ANSWER 10 OF 15 VETU COPYRIGHT 2002 THOMSON DERWENT

ACCESSION NUMBER: 1991-62712 VETU M

TITLE: Large Doses of Turkey Coccidia Partially Protect Chickens  
Against *Eimeria tenella* and *E. acervulina*.

AUTHOR: Augustine P C; **Danforth H D**; **Barta J R**

LOCATION: Beltsville, Md., USA; Guelph, Ont., Can.

SOURCE: Poult.Sci. (70, Suppl. 1, 8, 1991)

CODEN: POSCAL

AVAIL. OF DOC.: USDA, ARS, Livestock and Poultry Science Institute,  
Beltsville, MD 20705-2350, U.S.A.

LANGUAGE: English

DOCUMENT TYPE: Journal

FIELD AVAIL.: AB; LA; CT

AB Large doses of *Eimeria adenoeides* or *E. meleagritidis* partially protected white leghorn chickens against challenge with *E. tenella* and *E. acervulina*. Weight gain of immunized chickens was higher than that of unimmunized chickens but did not differ markedly. Feed conversion ratios of immunized chickens were lower than those of unimmunized chickens. Immunization with *E. gallopavonis* failed to protect chickens against challenge with *E. tenella*, *E. acervulina* or *E. necatrix*. (congress abstract).

L11 ANSWER 11 OF 15 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1991:448061 BIOSIS

DOCUMENT NUMBER: BR41:85796

TITLE: LARGE DOSES OF TURKEY COCCIDIA PARTIALLY PROTECT CHICKENS  
AGAINST *EIMERIA-TENELLA* AND *EIMERIA-ACERVULINA*.

AUTHOR(S): AUGUSTINE P C; **DANFORTH H D**; **BARTA J R**

CORPORATE SOURCE: USDA, ARS, LIVESTOCK AND POULTRY SCI. INST., BELTSVILLE,  
MD. 20705-2350.

SOURCE: EIGHTIETH ANNUAL MEETING OF THE POULTRY SCIENCE  
ASSOCIATION, INC., COLLEGE STATION, TEXAS, USA, AUGUST  
12-16, 1991. POULT SCI, (1991) 70 (SUPPL 1), 8.  
CODEN: POSCAL. ISSN: 0032-5791.

DOCUMENT TYPE: Conference

FILE SEGMENT: BR; OLD

LANGUAGE: English

L11 ANSWER 12 OF 15 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1990:366837 BIOSIS

DOCUMENT NUMBER: BR39:51313

TITLE: X-IRRADIATION OF *EIMERIA-ACERVULINA* OOCYSTS INDUCES THE  
HOST PROTECTIVE IMMUNE RESPONSE.

AUTHOR(S): CASTLE M; JENKINS M; AUGUSTINE P; **BARTA J**;  
**DANFORTH H**

CORPORATE SOURCE: USDA, AGRIC. RES. SERV., BELTSVILLE, MD. 20705, USA.

SOURCE: JOINT MEETING OF THE AMERICAN SOCIETY FOR BIOCHEMISTRY AND  
MOLECULAR BIOLOGY, AND THE AMERICAN ASSOCIATION OF  
IMMUNOLOGISTS, NEW ORLEANS, LOUISIANA, USA, JUNE 4-7, 1990.  
FASEB (FED AM SOC EXP BIOL) J, (1990) 4 (7), A2229.  
CODEN: FAJOEC. ISSN: 0892-6638.

DOCUMENT TYPE: Conference

FILE SEGMENT: BR; OLD

LANGUAGE: English

L11 ANSWER 13 OF 15 MEDLINE DUPLICATE 10  
 ACCESSION NUMBER: 91202438 MEDLINE  
 DOCUMENT NUMBER: 91202438 PubMed ID: 2128339  
 TITLE: Identification of an apically-located antigen that is conserved in sporozoan parasites.  
 AUTHOR: Taylor D W; Evans C B; Aley S B; **Barta J R**; **Danforth H D**  
 CORPORATE SOURCE: Department of Biology, Georgetown University, Washington, D.C.  
 CONTRACT NUMBER: RO1 AI 20917 (NIAID)  
 SOURCE: JOURNAL OF PROTOZOOLOGY, (1990 Nov-Dec) 37 (6) 540-5. Journal code: 2985197R. ISSN: 0022-3921.  
 PUB. COUNTRY: United States  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 199105  
 ENTRY DATE: Entered STN: 19910607  
 Last Updated on STN: 19910607  
 Entered Medline: 19910523

AB Sporozoan parasites of the phylum Apicomplexa all possess common apical structures. The current study used a monoclonal antibody (mAb-E12) to identify a conserved antigen in the apical region of merozoites of seven species of Plasmodium (including rodent, primate and human pathogens), tachyzoites of Toxoplasma gondii, bradyzoites of Sarcocystis bovis, and sporozoites and merozoites of Eimeria tenella and E. acervulina. The antigen was also present in sporozoites of haemosporinid parasites. Immunofluorescence studies showed that the antigen was restricted to the apical 3rd of these invasive stages. Using immunoelectron microscopy, labeling was demonstrated in the region of the polar ring, below the paired inner membranes of the parasite pellicle, and near the subpellicular microtubules radiating from the polar ring of merozoites and sporozoites of E. tenella. The majority of the antigen could be extracted with 1% Triton-X 100, but a portion remained associated with the cytoskeletal elements. The molecule has a relative rate of migration (Mr) of 47,000 in Plasmodium spp. and 43-46,000 in coccidian species. Since the epitope recognized by mAb-E12 is highly conserved, restricted to motile stages, and appears to be associated with microtubules, this antigen could be involved in cellular motility and cellular invasion.

L11 ANSWER 14 OF 15 MEDLINE DUPLICATE 11  
 ACCESSION NUMBER: 90184343 MEDLINE  
 DOCUMENT NUMBER: 90184343 PubMed ID: 1690144  
 TITLE: Eimeria acervulina: cloning of a cDNA encoding an immunogenic region of several related merozoite surface and rhoptry proteins.  
 AUTHOR: Jenkins M C; Lillehoj H S; **Barta J R**; **Danforth H D**; Strohlein D A  
 CORPORATE SOURCE: U.S. Department of Agriculture, Animal Parasitology Unit, Beltsville, Maryland 20705.  
 SOURCE: EXPERIMENTAL PARASITOLOGY, (1990 Apr) 70 (3) 353-62. Journal code: 0370713. ISSN: 0014-4894.  
 PUB. COUNTRY: United States  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 OTHER SOURCE: GENBANK-M37843  
 ENTRY MONTH: 199004  
 ENTRY DATE: Entered STN: 19900601

Last Updated on STN: 19960129

Entered Medline: 19900417

AB A cDNA encoding a recombinant *Eimeria acervulina* antigen, designated EAMZp30-47, that contains an epitope shared among several surface and rhoptry proteins of merozoites was characterized. The respective parasite proteins are between 30 and 47 kDa as revealed by immunostaining of nitrocellulose membrane containing extracts of 125I-labeled merozoites. As indicated by immunofluorescence and immunoelectron microscopic staining, the reactive epitope was localized to both the surface membrane and the internal rhoptries of this asexual stage of the parasite. The recombinant beta-galactosidase fusion protein EAMZp30-47 is 130 kDa, thus representing 15 kDa or 30-50% of the respective parasite protein. Purified EAMZp30-47 stimulates T cells from *E. acervulina*-immune inbred chickens, but is not recognized by immune chicken serum, suggesting that T cell and not B cell epitopes recognized by the host immune system during a natural infection are present on the recombinant protein. Northern and Southern blot hybridization experiments indicated that expression of EAMZp30-47 is restricted to the merozoite stage of the parasite and the gene occurs as a single copy sequence within the genome.

L11 ANSWER 15 OF 15 VETU COPYRIGHT 2002 THOMSON DERWENT

ACCESSION NUMBER: 1990-62880 VETU M

TITLE: Identification of Genetically Engineered Antigens that Elicit Immunological Responses to Avian Coccidial Infections.

AUTHOR: Danforth H D; Augustine P C; Jenkins M C; Castle M D; Lillehoj H S; Barta J R

LOCATION: Beltsville, Md., USA

SOURCE: Poult.Sci. (69, Suppl. 1, 40, 1990)

CODEN: POSCAL

AVAIL. OF DOC.: USDA, ARS, LPSI, Protozoan Diseases Laboratory, Beltsville, MD 20705, U.S.A.

LANGUAGE: English

DOCUMENT TYPE: Journal

FIELD AVAIL.: AB; LA; CT

AB Genetically engineered antigens that elicit immunological responses to *Eimeria acervulina* and *E. tenella* infections were determined. Immunofluorescent and immunoelectron microscopy techniques revealed that antigens were found on the surface or in specific internal organelles of the parasites. All recombinant antigens stimulated T cells from *E. acervulina*-immune inbred chickens, and 3 of these antigens elicited significant protection in battery trials against p.o. challenge with *E. acervulina* and *E. tenella*. The results demonstrate the importance of antigens from different stages and areas of the parasite in eliciting a protective immune response against coccidial infection. (congress abstract).

# Subject matter - claims 1 & 2 -

J. Hines; 09/838,382

Page 1

Point of Contact:  
Thomas G. Larson, Ph.D.  
703-308-7309  
CM1, Rm. 6 B 01

=> FIL MEDLINE AGRICOLA CABA VETU CAPLUS BIOSIS EMBASE WPIDS  
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=> d que 13

L1 2791 SEA (EIMERIA AND MAXIMA) OR (E (W) MAXIMA)  
L2 9 SEA IMMUNOVARIANT OR IMMUNO (W) VARIANT  
L3 0 SEA L1 AND L2

- no answers using  
"immunovariant"

=> d que 15

L1 2791 SEA (EIMERIA AND MAXIMA) OR (E (W) MAXIMA)  
L4 17 SEA IMMUNOVAR? OR IMMUNO (W) VAR?  
L5 1 SEA L1 AND L4

- Truncate to allow  
for spelling variations

=> d que 17

L1 2791 SEA (EIMERIA AND MAXIMA) OR (E (W) MAXIMA)  
L6 204 SEA L1 AND IMMUNOL?  
L7 23 SEA L6 AND VARIA?

- Search for uses of  
immunological and  
variation

=> d que 19

L1 2791 SEA (EIMERIA AND MAXIMA) OR (E (W) MAXIMA)  
L8 3853 SEA MAXIMA-1 OR MAXIMA-I  
L9 15 SEA L1 AND L8

- check for name  
given to strain.

=> s 15 or 17 or 19

L10 39 L5 OR L7 OR L9

- combine answer  
sets

=> dup rem l10

PROCESSING COMPLETED FOR L10

L11 32 DUP REM L10 (7 DUPLICATES REMOVED)

- remove duplicates.

=> d ibib ab 1-32

L11 ANSWER 1 OF 32 MEDLINE  
ACCESSION NUMBER: 2002217057 MEDLINE

DOCUMENT NUMBER: 21950564 PubMed ID: 11953384  
 TITLE: Antigenic diversity in *Eimeria maxima*  
 and the influence of host genetics and immunization  
 schedule on cross-protective immunity.  
 AUTHOR: Smith Adrian L; Hesketh Patricia; Archer Andrew; Shirley  
 Martin W  
 CORPORATE SOURCE: Institute for Animal Health, Compton Laboratory, Compton,  
 Newbury, Berks RG20 7NN, United Kingdom..  
 adrian.smith@bbsrc.ac.uk  
 SOURCE: INFECTION AND IMMUNITY, (2002 May) 70 (5) 2472-9.  
 Journal code: 0246127. ISSN: 0019-9567.  
 PUB. COUNTRY: United States  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 200205  
 ENTRY DATE: Entered STN: 20020416  
 Last Updated on STN: 20020509  
 Entered Medline: 20020508

AB *Eimeria* spp. are a group of highly successful intracellular protozoan parasites that develop within enterocytes. *Eimeria maxima* from the chicken is characterized by high immunogenicity (a small priming infection gives complete immunity to subsequent homologous challenge) and naturally occurring antigenically variant populations that do not completely cross-protect. In this study we examined the expression of antigenic diversity in *E. maxima*, as manifested by cross-strain protection in a series of inbred chicken lines. The IAH line of Light Sussex chickens and all lines of inbred White Leghorns were susceptible to primary infections with either of two strains (H and W) of *E. maxima* and were protected completely against challenge with the homologous strain of parasite. The extent of cross-protection against the heterologous parasite strain varied from 0 to almost 100% depending on host genetics. Interestingly, in one inbred line of chickens (line 15I) the cross-protective phenotype was directional and intensely influenced by the infection history of the host. The basis for the observed variation in cross-protection is not known, but our results suggest that the major histocompatibility complex is not a major genetic component of the phenotype. These results are discussed in relation to the number of protective antigens presented by complex pathogens and the development of immunoprotective responses in hosts of different genetic backgrounds.

L11 ANSWER 2 OF 32 VETU COPYRIGHT 2002 THOMSON DERWENT

ACCESSION NUMBER: 2001-61850 VETU  
 TITLE: Application of non-attenuated and gamma-irradiated eimerian oocysts to control avian coccidiosis.  
 AUTHOR: Jenkins M; Botero S; Allen P; Danforth H  
 CORPORATE SOURCE: USDA-ARS  
 LOCATION: Beltsville, Md., USA  
 SOURCE: Proc.Am.Assoc.Vet.Parasitol. (45 Meet., 114, 2000)  
 AVAIL. OF DOC.: Immunology & Disease Resistance Laboratory, ARS, USDA,  
 Beltsville, MD 20705, U.S.A.  
 LANGUAGE: English  
 DOCUMENT TYPE: Journal  
 FIELD AVAIL.: AB; LA; CT

AB An alternative approach for controlling avian coccidiosis has been vaccination of broiler chicks with low doses of virulent, precocious, or irradiated *Eimeria* spp. oocysts. This study determined if vaccination of chickens with irradiated coccidia was a viable approach to

controlling avian coccidiosis in a medium-size broiler operation.  
(conference abstract: American Association of Veterinary Parasitologists,  
45th Annual Meeting, Boston, Massachusetts, USA, July, 2000).

## L11 ANSWER 3 OF 32 AGRICOLA

ACCESSION NUMBER: 2000:11772 AGRICOLA  
DOCUMENT NUMBER: IND22027394  
TITLE: Immunological aspects of infections with  
*Eimeria maxima*: a short review.  
AUTHOR(S): Schnitzler, B.E.; Shirley, M.W.  
CORPORATE SOURCE: Swedish University of Agricultural Sciences & National  
Veterinary Institute, Uppsala, Sweden.  
AVAILABILITY: DNAL (SF995.A1A9)  
SOURCE: Avian pathology, Dec 1999. Vol. 28, No. 6. p. 537-543  
Publisher: Oxfordshire : Carfax Publishing Ltd.  
CODEN: AVPADN; ISSN: 0307-9457  
NOTE: Includes references  
PUB. COUNTRY: England; United Kingdom  
DOCUMENT TYPE: Article; Law  
FILE SEGMENT: Non-U.S. Imprint other than FAO  
LANGUAGE: English  
SUMMARY LANGUAGE: French; German; Spanish

## L11 ANSWER 4 OF 32 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:163533 CAPLUS  
DOCUMENT NUMBER: 132:168181  
TITLE: A theoretical treatment of critical heat flux on  
metal-graphite composite heating surfaces  
AUTHOR(S): Yang, Wen-Jei; Zhang, Nengli  
CORPORATE SOURCE: Department of Mechanical Engineering and Applied  
Mechanics, University of Michigan, Ann Arbor, MI,  
48109, USA  
SOURCE: HTD (American Society of Mechanical Engineers) (1999),  
364-2(Proceedings of the ASME Heat Transfer  
Division--1999, Vol. 2), 315-320  
CODEN: ASMHD8; ISSN: 0272-5673  
PUBLISHER: American Society of Mechanical Engineers  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB This paper presents a theor. treatment of the crit. heat flux on  
metal-graphite composite surfaces. A previous study found that the tips  
of graphite-fibers act as bubble nucleation sites. Throughout the  
transition boiling regime, vapor rises into liq. on the nodes of the  
Taylor waves in ref. to the Rayleigh-Taylor instability theory. At the  
crit. (i.e., max.) heat flux, this rising vapor forms  
into jets. These jets come from the graphite fiber tips that are arranged  
in an equilateral triangular grid in the metal matrix. The basic spacing  
of the grid is the two-dimensional Taylor wavelength, which is the spacing  
of the most basic module of jets. At the peak heat flux, the  
Kelvin-Helmholtz instability causes the jets to become unstable and brings  
about burnout. In other words, this instability theory predicts when the  
vapor velocity in the jet will reach a crit. value to cause the vapor jets  
to cave in. The existing empirical results indicate that the nucleate  
pool boiling curves for metal-graphite composites of different graphite  
concns. (i.e., area fractions) congregate near the crit. heat flux of the  
composite for the optimum performance as the degree of superheat  
increases. With this particular graphite-fiber concn. known, a balance of  
the heat flux by the latent heat carried away in the jets when the liq. is  
satsd. yields the max. (i.e., crit.) heat flux  
equation. Both copper-graphite and aluminum graphite composites are



treated.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 5 OF 32 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:708701 CAPLUS

DOCUMENT NUMBER: 129:314968

TITLE: **Eimeria** proteins from Triton X-114 extract  
as coccidiosis vaccines and **immunological**  
reagents

INVENTOR(S): Vermeulen, Arno N.; Clercx-Breed, Dominique G. j.

PATENT ASSIGNEE(S): Akzo Nobel N.V., Neth.

SOURCE: Eur. Pat. Appl., 19 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 872486	A1	19981021	EP 1998-201097	19980407
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
ZA 9802763	A	19981005	ZA 1998-2763	19980401
CA 2234472	AA	19981009	CA 1998-2234472	19980408
AU 9860754	A1	19981015	AU 1998-60754	19980408
AU 747818	B2	20020523		
US 2002006408	A1	20020117	US 1998-56806	19980408
JP 10298104	A2	19981110	JP 1998-97400	19980409
BR 9801023	A	20000111	BR 1998-1023	19980409
PRIORITY APPLN. INFO.:			EP 1997-302447	A 19970409

AB Comps. comprising **Eimeria** proteins or **variants**  
/fragments of such proteins can be used to produce a coccidiosis vaccine  
or **immunol.** reagent. The proteins are present in the  
hydrophilic phase of a Triton X-114 ext. of **Eimeria** sporozoites  
and have mol. masses of 26-30 +/- 5 kDa when detd. by SDS PAGE under  
reducing conditions. Nine hydrophilic fractions of sporozoite proteins  
from *E. tenella*, sep'd. according to different mol. wt., were tested for  
their ability to stimulate T-cell responses in PBL from day 8 p.i. in  
chickens. Although all vaccine preps. induced strong T-cell responses,  
surprisingly only one fraction induced partial protection against oral  
challenge infection with *E. tenella* oocysts.

L11 ANSWER 6 OF 32 AGRICOLA

DUPLICATE 1

ACCESSION NUMBER: 1999:16055 AGRICOLA

DOCUMENT NUMBER: IND21967186

TITLE: Use of live oocyst vaccines in the control of avian  
coccidiosis: experimental studies and field trials.

AUTHOR(S): Danforth, H.D.

CORPORATE SOURCE: USDA, ARS, Parasite Biology and Epidemiology  
Laboratory, Beltsville, MD.

AVAILABILITY: DNAL (QH547.I55)

SOURCE: International journal for parasitology, July 1998.  
Vol. 28, No. 7. p. 1099-1109

Publisher: Oxford : Elsevier Science Ltd.

CODEN: IJPYBT; ISSN: 0020-7519

NOTE: Paper presented at the VII International Coccidiosis  
Conference held September 1-7, 1997, Oxford, UK.  
Includes references

PUB. COUNTRY: England; United Kingdom  
 DOCUMENT TYPE: Article  
 FILE SEGMENT: Non-U.S. Imprint other than FAO  
 LANGUAGE: English

AB Areas addressed in this study on the use of live oocyst vaccines to control coccidiosis include: the influence of immunocompetency of the strains and sex of the birds used; methods of delivery of vaccine; **immunological variation** between different strains of the same coccidial species; and the effects of combining vaccine with anticoccidial medication. The results show that vaccination with live oocysts elicited significant protection against coccidiosis, both with experimentally induced and naturally acquired coccidial infection, resulting in average bird weight gains and feed efficiency similar to that obtained with conventional anticoccidial medication.

L11 ANSWER 7 OF 32 MEDLINE DUPLICATE 2  
 ACCESSION NUMBER: 1998220120 MEDLINE  
 DOCUMENT NUMBER: 98220120 PubMed ID: 9559366  
 TITLE: Analysis of infraspecific **variation** among five strains of **Eimeria maxima** from North America.  
 AUTHOR: Barta J R; Coles B A; Schito M L; Fernando M A; Martin A; Danforth H D  
 CORPORATE SOURCE: Department of Pathobiology, Ontario Veterinary College, University of Guelph, Ont., Canada.. jbarta@uoguelph.ca  
 SOURCE: INTERNATIONAL JOURNAL FOR PARASITOLOGY, (1998 Mar) 28 (3) 485-92.  
 Journal code: 0314024. ISSN: 0020-7519.  
 PUB. COUNTRY: ENGLAND: United Kingdom  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 199805  
 ENTRY DATE: Entered STN: 19980514  
 Last Updated on STN: 19980514  
 Entered Medline: 19980505

AB Two laboratory strains from the eastern shore of Maryland 15 years ago and from an Ontario broiler house 23 years ago and three recent field strains of **Eimeria maxima** (isolated in Maryland, North Carolina and Florida) were examined for phenotypic and genotypic **variation** using protein profiles, random amplified polymorphic DNA-PCR analysis and DNA sequences obtained from the internal transcribed spacer regions of the rRNA genes. Staining profiles obtained by one-dimensional SDS-PAGE of sporozoite proteins were identical in all five strains. Using random amplified polymorphic DNA-PCR analysis with high %G-C content decamers as primers, we were able to confirm that the five strains are all **E. maxima**, but were unable to discern any relationships among them because of the limited number of shared polymorphisms identified. In contrast, cloning and sequencing of the internal transcribed spacer-1, 5.8S rDNA and internal transcribed spacer-2 regions of the rRNA genes provided sufficient sequence information to infer phylogenetic relationships among the strains. Almost all of the **infraspecific variation** was located in the internal transcribed spacer regions. Only two base changes were identified within the 5.8S rRNA gene. Evolutionary relationships among the strains inferred using parsimony analysis of the aligned internal transcribed spacer sequences were well supported, but the hypothesised relationships did not correlate well with the demonstrated **immunological** cross-reactivities of these strains.

## L11 ANSWER 8 OF 32 AGRICOLA

ACCESSION NUMBER: 97:82027 AGRICOLA  
DOCUMENT NUMBER: IND20604543  
TITLE: Analysis of immunological cross-protection and sensitivities to anticoccidial drugs among five geographical and temporal strains of *Eimeria maxima*.  
AUTHOR(S): Martin, A.G.; Danforth, H.D.; Barta, J.R.; Fernando, M.A.  
CORPORATE SOURCE: USDA, ARS, Livestock and Poultry Science Institute, Beltsville, MD.  
SOURCE: International journal for parasitology, May 1997. Vol. 27, No. 5. p. 527-533  
Publisher: Oxford : Elsevier Science Ltd.  
CODEN: IJPYBT; ISSN: 0020-7519  
NOTE: Includes references  
PUB. COUNTRY: England; United Kingdom  
DOCUMENT TYPE: Article  
FILE SEGMENT: Non-U.S. Imprint other than FAO  
LANGUAGE: English

AB Two laboratory strains (USDA strain No.68 isolated from the eastern shore of Maryland 15 years ago and a University of Guelph strain isolated from an Ontario broiler house 23 years ago) and 3 recent field strains of *Eimeria maxima* [isolated in Maryland (MD), North Carolina (NC) and Florida (FL)] were tested for their ability to induce cross-protective immunity and their sensitivities to a variety of anticoccidial compounds. To assess immunological cross-protection, 1-day-old chicks were inoculated and subsequently challenged at 10 days of age, testing all possible combinations of initial inoculating (immunizing) and subsequent challenge strain. Six days post-challenge, chicks were killed and weight gains and lesion scores were determined and compared to sham inoculated and challenged, and sham challenged age-matched controls. The 2 laboratory strains and the NC strain were fully cross-protective against each other by both these measures. In contrast, the MD and FL strains induced complete protection only against the homologous strain. Reciprocally, no other strains protected chicks completely against the FL and MD strains. Drug sensitivity studies using 10 different anticoccidial formulations at prescribed drug levels showed significant differences between the 2 laboratory strains and the 3 recently isolated field strains; more recent isolates from commercial broiler houses demonstrated complete or partial resistance to a wider range of anticoccidial compounds. No correlation was seen between cross-protection and sensitivities to anticoccidials.

## L11 ANSWER 9 OF 32 VETU COPYRIGHT 2002 THOMSON DERWENT

ACCESSION NUMBER: 1996-61677 VETU  
TITLE: Effect of semduramicin, salinomycin, and monensin on performance, shank pigmentation, and coccidial lesions in broiler chickens in floor pens.  
AUTHOR: Mcdougald L R; Mathis G F; Conway D P  
CORPORATE SOURCE: Georgia-Poultry-Res.; Pfizer  
LOCATION: Athens, Ga.; New York, N.Y., USA  
SOURCE: Avian Dis. (40, No. 1, 68-71, 1996) 2 Tab. 20 Ref.  
CODEN: AVDIAI  
AVAIL. OF DOC.: Georgia Poultry Research Inc., Athens, GA 30607, U.S.A.  
LANGUAGE: English  
DOCUMENT TYPE: Journal  
FIELD AVAIL.: AB; LA; CT  
AB The effect of semduramicin (SEM; Aviax, Pfizer), salinomycin (SAL; Bio-Cox, Roche) and monensin (MON; Coban, Elanco) on performance, shank

pigmentation and experimental coccidiosis in broiler chickens kept in floor pens is reported. Broiler chicks were fed 1 of the 3 coccidiostats during the starter and grower phases. All 3 drugs improved weight gain, feed:gain and shank pigmentation and reduced coccidial lesions scores in the upper (*Eimeria acervulina*) and middle intestines (*E. maxima*) and cecum (*E. tenella*) after challenge. SEM was the most effective drug followed by MON and then SAL for all parameters except for cecal lesions where all 3 drugs were equally effective.

L11 ANSWER 10 OF 32 CABA COPYRIGHT 2002 CABI

ACCESSION NUMBER: 95:173086 CABA

DOCUMENT NUMBER: 950807575

TITLE: Comparison of immune responses in inbred lines of chickens to *Eimeria maxima* and *Eimeria tenella*

AUTHOR: Bumstead, J. M.; Bumstead, N.; Rothwell, L.; Tomley, F. M.

CORPORATE SOURCE: Institute for Animal Health, Compton, Newbury, Berkshire RG16 0NN, UK.

SOURCE: Parasitology, (1995) Vol. 111, No. 2, pp. 143-151. 30 ref.

ISSN: 0031-1820

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Immune responses of 4 inbred lines of chickens, that differ in resistance to *Eimeria maxima* and *E. tenella*, were examined. Significant differences were found in in vitro proliferation of peripheral blood lymphocytes to *E. maxima* sporozoite antigen, the more resistant lines C and 72 having higher responses than the more susceptible line 15I. These differences existed pre-infection and were enhanced following both primary and a second infection. The proportions of lymphocyte subsets in the peripheral blood following primary infection also differed between lines with significantly higher percentages of CD8+ and TCR1+ lymphocytes circulating in the more resistant birds. In contrast, there were few differences between lines in either resistance or in in vitro proliferation of peripheral blood lymphocytes to *E. tenella* sporozoite antigen either pre-infection or following a primary infection. However, after a second infection when there were significant differences in resistance between lines, as measured by oocyst excretion, there were also significant differences in lymphoproliferation with the more resistant lines 15I and 62 having higher responses than the more susceptible line C. Thus for *E. maxima* there is a direct relationship between resistance to infection and lymphoproliferation in response to parasite antigen. This implies that differences in cellular immunity may account for differences in resistance between lines, and since these specific responses are enhanced by infection they may also reflect important immune mechanisms. For the rather less immunogenic *E. tenella*, the correlation between resistance and lympho-proliferation is not so clear. However, where there were significant differences between lines, i.e. after a second infection, the direct relationship between resistance and lymphoproliferation was upheld.

L11 ANSWER 11 OF 32 CABA COPYRIGHT 2002 CABI

ACCESSION NUMBER: 96:6450 CABA

DOCUMENT NUMBER: 950810381

TITLE: Characterization of rhoptry proteins of *Eimeria tenella* sporozoites: antigenic diversity of rhoptry epitopes within species of the genus *Eimeria* and among three asexual

generations of a single species, *E. tenella*  
 AUTHOR: Tomley, F. M.  
 CORPORATE SOURCE: Institute for Animal Health, Compton, Newbury,  
 Berkshire RG16 0NN, UK.  
 SOURCE: Infection and Immunity, (1994) Vol. 62, No. 10, pp.  
 4656-4658. 25 ref.  
 ISSN: 0019-9567  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Rhoptry organelles from sporozoites of *Eimeria tenella* contain  
 at least 60 independent polypeptides that can be resolved by 2-dimensional  
 gel electrophoresis. Rhoptries from 3 species of *Eimeria* that  
 infect chickens (*E. tenella*, *E. acervulina*, *E. maxima*)  
 share very few antibody cross-reactive epitopes, and there is poor  
 conservation of epitopes among 3 distinct asexual generations of zoites  
 within the developmental life cycle of a single parasite, *E. tenella*.

L11 ANSWER 12 OF 32 VETU COPYRIGHT 2002 THOMSON DERWENT

ACCESSION NUMBER: 1994-60612 VETU

TITLE: Effect of Amprolium on Production, Sporulation, and  
 Infectivity of *Eimeria* Oocysts.

AUTHOR: Ruff M D; Garcia R; Chute M B; Tamas T

CORPORATE SOURCE: USDA; Merck-USA

LOCATION: Beltsville, Md.; Rahway, N.J., USA

SOURCE: Avian Dis. (37, No. 4, 988-92, 1993) 5 Tab. 8 Ref.

CODEN: AVDIAI

AVAIL. OF DOC.: Protozoan Diseases Laboratory, Livestock and Poultry Sciences  
 Institute, United States Department of Agriculture -  
 Agricultural Research Service, Beltsville, Agriculture  
 Research Center-East, Beltsville, MD 20705, U.S.A.

LANGUAGE: English

DOCUMENT TYPE: Journal

FIELD AVAIL.: AB; LA; CT

AB In studies of over 1000 young chickens, p.o. amprolium (AM, Merck-USA)  
 given in feed or in drinking water reduced the number of *Eimeria*  
*acervulina*, *maxima*, *necatrix* and *tenella* oocysts shed, and  
 reduced sporulation of oocysts. For *E. acervulina* only, AM in water was  
 more effective than feed against sporulation. When fed to unmedicated  
 chickens, *E. tenella* and *acervulina* oocysts from AM-treated birds were as  
 infective as those from untreated birds.

L11 ANSWER 13 OF 32 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1992:632040 CAPLUS

DOCUMENT NUMBER: 117:232040

TITLE: Genetically-engineered coccidiosis vaccine

INVENTOR(S): Jacobson, James W.; Strausberg, Robert L.; Wilson,  
 Susan D.; Pope, Sharon H.; Strausberg, Susan Lee;  
 Raether, Wolfgang

PATENT ASSIGNEE(S): Genex Corp., USA; Hoechst A.-G.

SOURCE: PCT Int. Appl., 93 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9204461	A1	19920319	WO 1991-US6431	19910905
W: JP, US				

RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE  
 EP 548252 A1 19930630 EP 1991-917491 19910905  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE  
 JP 06504187 T2 19940519 JP 1991-516046 19910905  
 PRIORITY APPLN. INFO.: US 1990-581694 19900912  
 WO 1991-US6431 19910905

AB Recombinant antigenic proteins of avian coccidiosis, antigenic fragments of the proteins, genes encoding the polypeptides, and vaccines comprising the antigenic proteins or live transformed microorganism are disclosed. CDNA encoding antigen mc-4c of *Eimeria maxima* oocysts was identified and cloned and the nucleotide and amino acid sequences are presented. CDNAs for other antigens of *E. maxima* and of *E. tenella* were also cloned and sequenced.

L11 ANSWER 14 OF 32 MEDLINE  
 ACCESSION NUMBER: 92231750 MEDLINE  
 DOCUMENT NUMBER: 92231750 PubMed ID: 1567308  
 TITLE: Antigenic variation among strains of *Eimeria maxima* and *E. tenella* of the chicken.  
 AUTHOR: Fitz-Coy S H  
 CORPORATE SOURCE: Department of Agriculture, University of Maryland Eastern Shore, Princess Anne 21853.  
 SOURCE: AVIAN DISEASES, (1992 Jan-Mar) 36 (1) 40-3.  
 Journal code: 0370617. ISSN: 0005-2086.  
 PUB. COUNTRY: United States  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 199205  
 ENTRY DATE: Entered STN: 19920607  
 Last Updated on STN: 19920607  
 Entered Medline: 19920519

AB The immunogenicity and cross-protection of *Eimeria maxima* or *E. tenella* in chickens against their homologous and heterologous strains were evaluated in two experiments. The immunizing strain of *E. tenella* protected against itself and partially against heterologous strains. The North Carolina (NC) strains of *E. tenella* were more virulent than the Delmarva (DMV) strains. Growth of the unimmunized groups was depressed 66% and 32% for the NC and DMV strains, respectively. Growth of the immunized-challenged groups (DMV and NC) was depressed by 13%. The DMV *E. maxima* strains were more virulent than the NC strains. Growth of the unimmunized challenged groups was depressed by 47% (DMV) and 13% (NC). Results demonstrated that there are antigenic variations among strains of two species of chicken coccidia.

L11 ANSWER 15 OF 32 CAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1991:145665 CAPLUS  
 DOCUMENT NUMBER: 114:145665  
 TITLE: Durability of wood with acrylic-high-polymer. II. Dimensional stability with crosslinked acrylic copolymer in wood  
 AUTHOR(S): Fujimura, Taira; Inoue, Morimasa; Uemura, Isamu  
 CORPORATE SOURCE: Hyogo Prefect. Inst. Ind. Res., Kobe, 654, Japan  
 SOURCE: Mokuzai Gakkaishi (1990), 36(10), 851-9  
 CODEN: MKZGA7; ISSN: 0021-4795  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese

AB To compose acrylic-high-polymer in wood, the acrylic-copolymers which consisted of 2-hydroxyethylmethacrylate monomer and Me methacrylate were

synthesized (mol. wt. 20,000). Then the wood was permeated with the copolymers which were crosslinked by block-isocyanate. The interaction between the wood and the copolymer in this composite was examd. by measurements of the dynamic viscoelastic properties, and the dimensional stability (DS) was estd. from the shift of the peak temp. for the loss modulus [ $E''_{\max(1)}$  and  $E''_{\max(2)}$ ]. Also, the effects of the degree of crosslinking and the compn. of the acrylic-copolymers on DS were evaluated. The ASE (antishrink efficiency) of each composite increased with the shifting to the high-temp. side for [ $E''_{\max(1)}$ ] which was due to the great polymn. of the copolymer and the interaction between the wood and the copolymer. The ASEs were improved with the shifting to the low-temp. side for [ $E''_{\max(2)}$ ] which was caused by the reinforcement of the interaction. If the no. of crosslinked OH groups on one mol. in the copolymer are equiv. ot that of each copolymer series, when comparing DPT (difference of peak temps; DPT was calcd. as difference of peak temps. at non-crosslinking and at each ratio of NCO/OH for  $E''_{\max(1)}$  and  $E''_{\max(2)}$  in each series), the DPT could be almost similar, but the ASE differed between each other series. The existence of nonreactive OH groups were a neg. factor for DS.

L11 ANSWER 16 OF 32 CABA COPYRIGHT 2002 CABI

ACCESSION NUMBER: 91:63755 CABA

DOCUMENT NUMBER: 910871154

TITLE: Sensitivity of European isolates of avian coccidia to ionophore anticoccidials

AUTHOR: Munoz, L.; Rodriguez, V.; Wang, G. T.

CORPORATE SOURCE: Cyanamid Iberica S.A., Apartado 471, 28080 Madrid, Spain.

SOURCE: (1989) pp. 333-338. Les Colloques de l'INRA, No. 49. 3 ref.

Publisher: INRA Service des Publications. Versailles Meeting Info.: Coccidia and intestinal coccidiomorphs. Proceedings of the 5th International Coccidiosis Conference. Tours (France), 17-20 October 1989.

ISBN: 2-7380-0164-5

PUB. COUNTRY: France

DOCUMENT TYPE: Conference Article

LANGUAGE: English

AB A series of Anticoccidial Sensitivity Tests (42 in total) were carried out using as inoculum different field European isolates of *Eimeria* spp. recovered from samples of fresh droppings harvested in commercial farms. The Anticoccidial Index of Cuckler (1959) was used to assess the efficacy against these isolates of the full ionophore set (maduramicin, monensin, salinomycin, lasalocid and narasin) when used in feed at commercial rates. The results of the full package of tests were finally grouped for statistical analysis by the *Eimeria* spp. predominantly included in the isolates. The conclusion achieved by these 42 tests were: the most common association of *Eimeria* spp. found (64%) was that of *E. acervulina* + *E. tenella*. The best activity against this association (27 tests) corresponded to maduramicin followed by salinomycin. When *E. acervulina*-mivati was considered (7 tests), salinomycin reached the highest efficacy, followed by maduramicin. Against a mixed infection of *E. acervulina* + *E. maxima* (1 test), salinomycin was the most active, followed by maduramicin. The mixed infection of *E. acervulina* + *E. tenella* + *E. maxima* (5 tests) was particularly sensitive to maduramicin, followed by lasalocid. As for *E. tenella* (2 tests), maduramicin showed the

highest activity, followed by lasalocid.

L11 ANSWER 17 OF 32 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1988:538379 CAPLUS

DOCUMENT NUMBER: 109:138379

TITLE: A long-term short-spaced monitoring of silicon monoxide maser emission

AUTHOR(S): Martinez, A.; Bujarrabal, V.; Alcolea, J.

CORPORATE SOURCE: Cent. Astron. Yebes, Guadalajara, 19080, Spain

SOURCE: Astron. Astrophys., Suppl. Ser. (1988), 74(2), 273-98

CODEN: AAESB9; ISSN: 0365-0138

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The results are presented of a monitoring of SiO masers ( $v = 1, 2 J = 1-0$ ) carried out with the 14-m radiotelescope at the Astronomical Center of Yebes from June 1984 to Feb. 1987. Obsd. were 3 supergiants, 2 semiregular variables, 9 Mira variables, and the star-forming region Ori A every 20-30 days. A detailed comparison with previous work and a discussion of the observational method are included. Special care was taken to avoid sources of uncertainty in the relative calibration. An upper limit to the relative calibration uncertainty was found of 10%. In order to improve the comparison of the different spectra, every object was obsd. always with the same polarization in the sky (i.e. under the same parallactic angle). The repetitiveness of the SiO luminosity curves in Mira variables is relatively poor, with differences between max. as high as a factor of 2-3. A few times, the existence was detected of missing max., i.e. max. confused with the emission of the adjacent min. Variations of the velocity of the peaks during the phases of high emission were detected in W. Hya with an amplitude of .apprx.2 km/s and without clear dependence on the phase or line intensity. In the other Miras, the structure of the emission pattern was kept practically const. during the high intensity phases, but presented drastic changes in coincidence with some min. (the best example of this behavior is precisely o Cet, Mira). The supergiants and semiregular variables present some repetitiveness, VY CMa and VX Sgr show a period of .apprx.2 yr. For GY Aql a period was found of .apprx.500 days. The SiO variability results was interpreted as suggesting that SiO masers are formed close to the stellar atm., probably assocd. to the stationary inner layer of the envelope detected in the IR.

L11 ANSWER 18 OF 32 MEDLINE

ACCESSION NUMBER: 88187922 MEDLINE

DOCUMENT NUMBER: 88187922 PubMed ID: 3282046

TITLE: *Eimeria maxima* (Apicomplexa): a comparison of sporozoite transport in naive and immune chickens.

AUTHOR: Riley D; Fernando M A

CORPORATE SOURCE: Department of Pathology, University of Guelph, Ontario, Canada.

SOURCE: JOURNAL OF PARASITOLOGY, (1988 Feb) 74 (1) 103-10.

Journal code: 7803124. ISSN: 0022-3395.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 198805

ENTRY DATE: Entered STN: 19900308

Last Updated on STN: 19900308

Entered Medline: 19880519

AB This study compared the early stages of infection in naive and immune



chickens infected with *Eimeria maxima*. An immunoperoxidase stain was developed and used to detect sporozoites and early schizonts in tissue sections of intestinal epithelium. A significantly higher proportion of sporozoites was present in the crypts of naive chickens, 48 hr postinoculation of oocysts, compared to immune chickens. Sporozoites in immune birds tended to remain in the lamina propria rather than migrate to the crypts. Sporozoites were found within intraepithelial lymphocytes (IEL's) in the epithelium, the lamina propria, and the crypts of both naive and immune chickens. Parasites in IEL's of immune birds at the ultrastructural level and there were no apparent morphological abnormalities. Livers and spleens, of both immune and naive chickens that had been inoculated with *Eimeria maxima*, produced patent infections when fed to susceptible chickens. Infections could be transferred up to 72 hr post-inoculation of the donor birds. Peak oocyst production in the recipient birds occurred 7-8 days after the transfers. This time period approximates the prepatent period in a natural infection and thus implies that the extraintestinal stage was a sporozoite.

L11 ANSWER 19 OF 32 MEDLINE DUPLICATE 3  
 ACCESSION NUMBER: 87151053 MEDLINE  
 DOCUMENT NUMBER: 87151053 PubMed ID: 3493582  
 TITLE: Immune response during coccidiosis in SC and FP chickens.  
 I. In vitro assessment of T cell proliferation response to stage-specific parasite antigens.  
 AUTHOR: Lillehoj H S  
 SOURCE: VETERINARY IMMUNOLOGY AND IMMUNOPATHOLOGY, (1986 Dec) 13  
 (4) 321-30.  
 Journal code: 8002006. ISSN: 0165-2427.  
 PUB. COUNTRY: Netherlands  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 198703  
 ENTRY DATE: Entered STN: 19900303  
 Last Updated on STN: 19900303  
 Entered Medline: 19870330

AB Development of cell-mediated immunity (CMI) and comparative effectiveness of different stage-specific coccidia antigens in T cell activation during avian coccidiosis were evaluated in two inbred strains of chickens using a specific in vitro T cell proliferation assay. Lymphocytes from chickens infected with different *Eimeria* spp. showed proliferative response to sporozoites, merozoites or *Eimeria* soluble antigen (Esa) excreted by cultured parasites. Detectable CMI response was observed at 21 day P.I. in chickens infected with *E. tenella* and *E. maxima*. Generally lower T cell response was observed in chickens infected with *E. acervulina*. Merozoites were highly immunogenic compared to sporozoites. Esa prepared from cultured parasites was as effective as whole parasites in evoking a T cell response. Although strain variation in T cell response to parasites or Esa was observed during a primary infection, substantially enhanced T cell response was observed 3 days after a secondary infection in both strains of chickens. The results of the present investigation suggest that Esa may be a major parasite antigen released to the immune system during early stages of infection and relevant to the development of protective immunity.

L11 ANSWER 20 OF 32 MEDLINE  
 ACCESSION NUMBER: 87039218 MEDLINE  
 DOCUMENT NUMBER: 87039218 PubMed ID: 3534564  
 TITLE: Identification of the sporozoite antigens of

**Eimeria tenella.**  
 AUTHOR: Wisher M H  
 SOURCE: MOLECULAR AND BIOCHEMICAL PARASITOLOGY, (1986 Oct) 21 (1)  
 7-15.  
 Journal code: 8006324. ISSN: 0166-6851.  
 PUB. COUNTRY: Netherlands  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 198612  
 ENTRY DATE: Entered STN: 19900302  
 Last Updated on STN: 19900302  
 Entered Medline: 19861211

AB The surface membranes of **Eimeria tenella** sporozoites were labelled with 125I and polypeptides resolved by polyacrylamide gel electrophoresis in sodium dodecyl sulphate (SDS-PAGE). The most heavily labelled polypeptides were 47, 26, 21 and less than or equal to 18 kDa but significant amounts of 125I were incorporated into a number of polypeptides with molecular weights ranging from greater than 200 000 to less than 18 000. Similar 125I-polypeptide profiles were observed after the surface labelling of sporozoites of **E. acervulina**, **E. maxima** and **E. nieschulzi**. Sporozoites of **E. tenella** were also radiolabelled by incubation in medium containing [35S]methionine and SDS-PAGE resolved more than 35 radiolabelled polypeptides with molecular weights from greater than 200 000 to less than 18 000. 125I and 35S-labelled sporozoites of **E. tenella** were solubilised in the detergents Triton X-100 or sodium deoxycholate and immunoprecipitated with serum from chickens immunized by infection with this species. Polypeptides of unlabelled **E. tenella** sporozoites, resolved by SDS-PAGE, were blotted onto nitrocellulose and the antigens, which reacted with the chicken serum, identified by immunoperoxidase staining. There was some variation between different sporozoite preparations in the number and molecular weights of antigens identified by these techniques but, consistently, the major surface polypeptides that were specifically immunoprecipitated were 104, 47 and 43 kDa. Specifically immunoprecipitated 35S-labelled antigens were of 123-94 kDa, 54-42 kDa and 32-25 kDa and antigens detected on Western blots were within the following ranges: 113-96 kDa, 73-67 kDa, 54-42 kDa, 37-32 kDa and 18-14 kDa.

L11 ANSWER 21 OF 32 VETU COPYRIGHT 2002 THOMSON DERWENT

ACCESSION NUMBER: 1986-60595 VETU M N T

TITLE: Investigations of the Efficacy of a New Anticoccidian Drug (BAY Vi 9142) in Broilers. Part 1. Part 2..  
 (Untersuchungen ueber die Wirkung eines neuen Antikokzidiiums (BAY Vi 9142) bei Broilern. 1. Mitteilung. 2. Mitteilung.))

AUTHOR: Kutzer E; Leibetseder J

LOCATION: Vienna, Austria

SOURCE: Wien.Tieraerztl.Monatsschr. (72, No. 11, 321-24, 1985) 16  
 Tab. 10 Ref. (S7/SW)  
 CODEN: WTMOA3

AVAIL. OF DOC.: Linke Bahngasse 11, A-1030 Wien, Austria.

LANGUAGE: German

DOCUMENT TYPE: Journal

FIELD AVAIL.: AB; LA; CT

AB BAY Vi 9142 (B, toltrazuril, Bayer), administered in the drinking water, was effective against **Eimeria tenella**, **E. maxima** and **E. acervulina** in young broiler chicks in controlled laboratory and field experiments. In deep litter flocks with a mild natural infection of **E. acervulina**, B completely prevented oocyst production. B had no effect on the general condition or water uptake of

the chicks. B was more effective than monensin Na administered in the feed.

L11 ANSWER 22 OF 32 MEDLINE DUPLICATE 4  
 ACCESSION NUMBER: 84041145 MEDLINE  
 DOCUMENT NUMBER: 84041145 PubMed ID: 6355983  
 TITLE: Antibodies to coccidia: detection by the enzyme-linked immunosorbent assay (ELISA).  
 AUTHOR: Rose M E; Mockett A P  
 SOURCE: PARASITE IMMUNOLOGY, (1983 Sep) 5 (5) 479-89.  
 Journal code: 7910948. ISSN: 0141-9838.  
 PUB. COUNTRY: ENGLAND: United Kingdom  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 198312  
 ENTRY DATE: Entered STN: 19900319  
 Last Updated on STN: 19900319  
 Entered Medline: 19831220

AB The ELISA test was used for the detection of antibodies to coccidia in the serum and/or egg yolk of chickens infected with *Eimeria* acervulina, *E. maxima* or *E. tenella* and in the serum of rats infected with *E. nieschulzi*. Antigens prepared from different developmental stages of the parasite were tested and the cross-reaction between different species of *Eimeria* were examined. The **variability** in cross-reactivity of different species and the advantages and possible applications of the test are discussed.

L11 ANSWER 23 OF 32 CABA COPYRIGHT 2002 CABI  
 ACCESSION NUMBER: 82:125692 CABA  
 DOCUMENT NUMBER: 822211259  
 TITLE: Studies on the immunological variation among *Eimeria maxima* field isolates from Georgia and other States  
 AUTHOR: Johnson, J. K.; Long, P. L.; Bosshardt, S. C.  
 SOURCE: Poultry Science, (1982) Vol. 61, No. 7, pp. 1486-1487.  
 ISSN: 0032-5791  
 DOCUMENT TYPE: Abstract  
 LANGUAGE: English

L11 ANSWER 24 OF 32 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
 ACCESSION NUMBER: 1984:17229 BIOSIS  
 DOCUMENT NUMBER: BR26:17229  
 TITLE: STUDIES ON THE IMMUNOLOGICAL VARIATION AMONG *EIMERIA-MAXIMA* FIELD ISOLATES FROM GEORGIA AND OTHER STATES.  
 AUTHOR(S): JOHNSON J K; LONG P L; BOSSHARDT S C  
 CORPORATE SOURCE: DEPARTMENT OF POULTRY SCIENCE, UNIVERSITY OF GEORGIA, ATHENS, GA. 30602.  
 SOURCE: 71ST ANNUAL MEETING OF THE POULTRY SCIENCE ASSOCIATION, INC. POULT SCI, (1982) 61 (7), 1486-1487.  
 CODEN: POSCAL. ISSN: 0032-5791.  
 DOCUMENT TYPE: Conference  
 FILE SEGMENT: BR; OLD  
 LANGUAGE: English

L11 ANSWER 25 OF 32 CABA COPYRIGHT 2002 CABI  
 ACCESSION NUMBER: 81:63456 CABA

DOCUMENT NUMBER: 810891097  
TITLE: The antigenicity of *Eimeria maxima* populations obtained from commercial farms  
AUTHOR: Shirley, M. W.; Hoyle, S. R.  
CORPORATE SOURCE: The Parasit. Dep., Houghton Poultry Res. Sta., Houghton, Huntingdon, Cambs PE17 2DA, UK.  
SOURCE: Journal of Parasitology, (1981) Vol. 67, No. 4, pp. 587-588. 7 ref.  
ISSN: 0022-3395  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB An examination was made of the antigenicity of isolates of *E. maxima* taken from each of 2 broiler houses in the UK during a period of 8 months when 4 generations of broiler chickens were reared. The results showed that (with one exception) oocysts were produced following heterologous challenge but the numbers were small and when compared to those of the appropriate control group, the degree of cross-immunity was usually between 95 and 99%. The results suggest that *E. maxima* does not normally undergo major changes in its antigenic composition.

L11 ANSWER 26 OF 32 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1980:267864 BIOSIS  
DOCUMENT NUMBER: BA70:60360  
TITLE: EXTRACTION OF ALGINIC-ACID FROM A SOUTH AFRICAN BROWN ALGA ECKLONIA-MAXIMA 1. EFFECT OF VARYING CONCENTRATIONS OF SODIUM CARBONATE ON THE YIELD OF ALGINIC-ACID.  
AUTHOR(S): NISHIDE E  
CORPORATE SOURCE: LAB. FISH. PROD., COLL. AGRIC. VET. MED., NIHON UNIV., 34-1 SHIMOUMA 3-CHOME, SETAGAYA, TOKYO 154, JPN.  
SOURCE: BULL COLL AGRIC VET MED NIHON UNIV, (1980) 0 (37), 279-283.  
CODEN: NIPDAD. ISSN: 0078-0839.  
FILE SEGMENT: BA; OLD  
LANGUAGE: Japanese

AB Alginic acid was extracted from a South African brown alga, *E. maxima*, and the relationship between the concentration of sodium carbonate and its yield was investigated. Extraction with 0.5 N-sodium carbonate gave a maximal yield of alginate, while 0.2 N-sodium carbonate was most suitable for the extraction from Japanese brown algae. The production cost of alginate from the South African brown alga, becomes higher than that from Japanese ones, and some device for an extraction procedure to lower the cost is needed on using *E. maxima* as the source of alginate.

L11 ANSWER 27 OF 32 CABA COPYRIGHT 2002 CABI

ACCESSION NUMBER: 79:118997 CABA  
DOCUMENT NUMBER: 792240218  
TITLE: Arprinocid, a new anticoccidial for broiler fowl  
Arprinocid, ein neues Antikokzidium fur die Huhnermast  
AUTHOR: Kutzer, E.; Leibetseder, J.; Prosl, H.; Mitterlehner, A.  
CORPORATE SOURCE: Inst. Parasitol., Veterinarmedizin. Univ., Linke Bahngasse 11, A-1030 Wein, Austria.  
SOURCE: Wiener Tierarztliche Monatsschrift, (1979) Vol. 66, No. 6/7, pp. 197-202. 17 ref.  
ISSN: 0043-535X  
DOCUMENT TYPE: Journal  
LANGUAGE: German

## SUMMARY LANGUAGE: English

AB Broiler fowl in 16 groups each of 100 were experimentally infected with *Eimeria* species (78% acervulina, 18% brunetti, 1% maxima, 1.5% each of necatrix and tenella) when 15 days old. Starter feed up to 4 weeks old and thereafter a mashed broiler feed contained 60 ppm arprinocid, 100 ppm monensin or no anticoccidial. Arprinocid was highly effective against the mixed coccidial infection. By 5 days after infection the severity of coccidial lesions in the intestines was less in medicated than in control birds, and in the duodenum and jejunum was significantly less in arprinocid-treated than in monensin-treated birds. Oocyst excretion was completely suppressed by arprinocid but not by monensin. Slaughter weights in arprinocid-, monensin-treated and untreated birds were 1783, 1740 and 1667 g respectively and variation in body weight was much lower in arprinocid-treated birds than in the other treatment.

L11 ANSWER 28 OF 32 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1975:38486 CAPLUS

DOCUMENT NUMBER: 82:38486

TITLE: Site of action of a broad-spectrum aryltriazine anticoccidial, CP-25,415

AUTHOR(S): Chappel, Larry R.; Howes, Harold L.; Lynch, John E.

CORPORATE SOURCE: Med. Res. Lab., Pfizer Inc., Groton, Conn., USA

SOURCE: J. Parasitol. (1974), 60(3), 415-20

CODEN: JOPAA2

DOCUMENT TYPE: Journal

LANGUAGE: English

AB CP 25,415 [2-[3-chloro-4-(4-chlorobenzoyl)phenyl]-as-triazine-3,5(2H,4H)-dione] (I) [38571-19-6], at 15 ppm in the feed, controlled single and mixed challenges of the major *Eimeria* species in chickens. The anticoccidial action was cidal, not static. All stages of *E. tenella*, *E. acervulina*, and *E. maxima* were affected by I with the exception of *E. maxima* developing macrogamonts. However, the susceptibility of the stages varied within and among the species. Against *E. acervulina* and *E. tenella*, the effect of I was seen primarily during 1st-generation schizogony. Against *E. maxima*, I limited schizogony to the deep crypts, but its primary effect was against recently fertilized female gamonts which rapidly degenerated within the tissues.

L11 ANSWER 29 OF 32 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1941:47535 CAPLUS

DOCUMENT NUMBER: 35:47535

ORIGINAL REFERENCE NO.: 35:7349b-d

TITLE: Young's modulus of elasticity, and its change by magnetization, of an iron-cobalt alloy

AUTHOR(S): Yamamoto, Mikio

SOURCE: Phys. Rev. (1941), 59, 768

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB The measurement was made by means of magnetostrictive oscillation (cf. C. A. 33, 103.5). The relation of max. value of the ratio of the change of Young's modulus of elasticity,  $(\Delta E/E)_{\max}$  and the compn. (wt. %) of the Fe-Co alloy is:  $(\Delta E/E)_{\max}$  for Armco Fe is +0.234%; it increases greatly with the increase of Co content up to 50% Co (more than +22%), and then decreases deeply to 70% Co (about +3%). From this min. the curve shows yet two small maxs. and ends at +0.186% for electrolyzed Co. The relation of Young's modulus of elasticity in nonmagnetized state, E and the compn. of the alloy is: the values of E in dynes/sq. cm. are for Fe, 30% Co, 85% Co, Co, resp., 2.1, 2.2 (max.), 1.64 (min.), 2.1.

L11 ANSWER 30 OF 32 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1941:47534 CAPLUS  
DOCUMENT NUMBER: 35:47534  
ORIGINAL REFERENCE NO.: 35:7349b-d  
TITLE: Young's modulus of elasticity, and its change by magnetization, of an iron-cobalt alloy  
AUTHOR(S): Yamamoto, Mikio  
SOURCE: Science (Japan) (1941), 11, 294-5  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB The measurement was made by means of magnetostrictive oscillation (cf. C. A. 33, 103.5). The relation of max. value of the ratio of the change of Young's modulus of elasticity,  $(\Delta E/E)_{\max}$  and the compn. (wt. %) of the Fe-Co alloy is:  $(\Delta E/E)_{\max}$  for Armco Fe is +0.234%; it increases greatly with the increase of Co content up to 50% Co (more than +22%), and then decreases deeply to 70% Co (about +3%). From this min. the curve shows yet two small maxs. and ends at +0.186% for electrolyzed Co. The relation of Young's modulus of elasticity in nonmagnetized state, E and the compn. of the alloy is: the values of E in dynes/sq. cm. are for Fe, 30% Co, 85% Co, Co, resp., 2.1, 2.2 (max.), 1.64 (min.), 2.1.

L11 ANSWER 31 OF 32 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1923:21437 CAPLUS  
DOCUMENT NUMBER: 17:21437  
ORIGINAL REFERENCE NO.: 17:3272c-e  
TITLE: Internal friction of the systems water-bromal and chloral-dimethylethylcarbinol  
AUTHOR(S): Efremov, N. N.  
SOURCE: J. Russ. Phys. Chem. Soc. (1918), 50(I), 338-71  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB This article contains additional data to the studies made by N. Kurnakov and his collaborators (J. Russ. Phys. Chem. Soc. 44, 375; Z. physik. Chem. 85, 401; and C. A. 7, 1126, 2147; 9, 11, 2478) on the isothermic viscosity curves of various binary systems. The isotherms of viscosity in the system  $\text{CBr}_3\text{CHO}-\text{H}_2\text{O}$  are characterized by "irrational" maxima, i. e., max. points changing their positions with changes of temp., which indicates a considerable degree of dissoc. of  $\text{CBr}_3\text{CH}(\text{OH})_2$  in the liquid phase. The heat of fusion curves of this system indicates the possibility of only 1 reaction between the 2 components yielding the normal monohydrate. The b. p. of this system reaches a min. with in the range of mol. concn. of 35-45%  $\text{CBr}_3\text{CHO}$ . Mixts. of  $\text{CBr}_3\text{CH}(\text{OH})_2$  with  $\text{H}_2\text{O}$  and with anhyd.  $\text{CBr}_3\text{CHO}$  are easily dehydrated on warming which causes the appearance of 2 layers in liquid solns. The properties of the system  $\text{CCl}_3\text{CHO}-(\text{CH}_3)_2\text{COHC}_2\text{H}_5$  (which is regarded as a chloral alcoholate) are similar to those of  $\text{CCl}_3\text{CHO}-\text{H}_2\text{O}$  and of  $\text{CCl}_3\text{CHO}-\text{EtOH}$ . In the liquid phase this system exists in a state of greater or lesser dissoc., as is shown by the character of the viscosity isotherms and of the curves of the temp. coeff. of internal friction.

L11 ANSWER 32 OF 32 VETU COPYRIGHT 2002 THOMSON DERWENT

ACCESSION NUMBER: 1990-62394 VETU M  
TITLE: Effect of Coccidiostatics on the Morphological Components in Chicken Blood.  
AUTHOR: Ibragimov D  
LOCATION: USSR  
SOURCE: Veterinariy (Moscow) (1990, No. 5, 43-44)  
CODEN: VETNAL

AVAIL. OF DOC.: No Reprint Address.

LANGUAGE: Russian

DOCUMENT TYPE: Journal

FIELD AVAIL.: AB; LA; CT

AB Addition of coccidin (methyldinitrobenzamide) (CO) to the feed of broiler chicks experimentally infected with a mixture of *Eimeria* tenella, *E. acervulina* and *E. maxima*, had no effects on infection-induced changes in hematological parameters, including reductions in Hb and RBC, an initial decrease followed by an increase in platelets, leukocytosis and lymphopenia. Analogous results were obtained with salinomycin.